5 Technology Trends for Communities

E-commerce is continuing to grow.

As more adults—especially women have begun shopping online, e-commerce revenues have grown to $114 billion in 2003 according to Shop.org, and Forrester Research. In 2003, for the first time, online revenues exceeded 5% of total retail sales.   Online retail sales are projected to increase 27% to $144 billion in 2004 with the largest increases expected in health and beauty products, apparel, flowers, cards, and gifts.   Because online small businesses sell primarily to consumers, the growth in retail e-commerce promises to benefit small businesses positioned to take advantage of e-commerce.

Many small businesses have developed Web sites to expand their markets. A 2001 survey of small businesses conducted by the NFIB found that 45% of small firms have a Web site.   The survey found that a majority of small businesses with Web sites reported gaining new customers (67%), improving competitive position (62%), and increasing total sales (56%) Nearly two-thirds of small businesses with Web sites made a profit or covered the costs of their Web sites. However, only 24% of businesses with Web sites generate revenue from online sales.   Most businesses say that Web sites stimulate purchases either at the place of business or by e-mail, fax, or phone.   Very small firms benefit the most from being online. Over a third (35%) of businesses with fewer than 10 employees gain 10 to 99 percent of current sales directly or indirectly from their Web sites.

More recent data indicates the continued impact of e-commerce on small businesses. A 2004 survey of small businesses commissioned by eBay and conducted by ACNeilsen found that a majority of small businesses say that the Internet has helped their business grow (58%) and become more profitable (51%).   A small but significant number of small businesses (15%) report that they could not survive without the Internet.

The impact of the Internet on small business goes beyond retail sales.   Nearly half (49%) of all businesses in the eBay/ACNeilsen survey reported that the Internet has helped them reduce costs.   Small businesses are using the Internet to purchase computers and office technology (54%), capital equipment and supplies (48%), and other business-related goods (59%).

A small but growing number of Nebraska businesses are generating revenue from Web sites.   Fifteen percent of Nebraska businesses with Web sites say that their site has helped generate a great amount of profit.   In 2002, Nebraska businesses with Web sites on averaged earned 5.5% of their revenue from their Web sites.

Nebraska firms appear to be adopting e-commerce at a slower rate than firms nationwide.   A 2004 survey of Nebraska businesses found that only 31% of small businesses have a Web site.   In comparison, 45% of small businesses nationwide had a Web site in 2001.

However, Nebraska businesses are interested in implementing e-commerce practices. Over half of Nebraska businesses believe that providing detailed product/service information online (66%), reaching new customers (65%), being able to place online orders with suppliers (56%), and improving customer service through the Web (55%) will be important to their business in the future.   Over 40% percent of Nebraska businesses are considering using information technology to expand or restructure their business in the future.   The biggest perceived barrier to using e-commerce practices is the preference of business owners for personal contact with customers (79%).   Other barriers are lack of time to implement and/or maintain a web site (71%), cost of developing and maintaining an Internet system (68%), and knowledge of e-commerce practices (67%).

Citizens and local officials are increasingly using e-government.

The July 2003 survey by the Pew Internet & American Life Project found that 97 million adult Americans, or 77% of Internet users, used e-gov in 2003 by going to government Web sites or e-mailing government officials. This represented a growth of 50% from 2002.

Local government officials are also using the Internet to communicate with constituents. A Pew Internet found that 88% of locally-elected officials use the Internet. Over 70% of online officials note that e-mail exchanges with constituents help them better understand public opinion.

Telehealth is expanding.

In August, 2004, connections were made among the telehealth networks in the state and the State of Nebraska, connecting most of the state's hospitals. Within the next year, additional hospitals and health department will be connected to the Nebraska Telehealth Network. The statewide network will expand access to specialist services, continuing medical education, and bioterrorism alerts.

Home telehealth is one of the fastest growing applications of telemedicine. Several studies have indicated that home telehealth has a positive impact on the lives of patients and can reduce health care costs. Although some home telehealth systems can use the plain old telephone system (POTS), broadband availability in a community facilitates the delivery of home telehealth programs.

Voice Over IP (VoIP) is changing the telecommunications landscape.

Voice over Internet Protocol (VoIP) offers the capability to transmit voice communications over the Internet or private networks using Internet Protocol. At the end of 2003, there were 150,000 VoIP subscribers. Gartner predicts that the number of subscribers will grow to 1 million by the end of 2004 and to 6 million by the end of 2005. Most VoIP services offer customers a range of features including voicemail, CallerID, call forwarding, 3-way calling, and call blocking. Customers have the option of choosing a phone number from nearly any area code in the country, and VoIP may offer true number portablility. This may be one of the key drivers of VoIP. Currently, VoIP services are not subject to many state or federal taxes and fees, and thus can offer very attractive calling plans. There are some drawbacks to VoIP. For instance, not all VoIP providers offer 911 emergency service capability.

Andrew Cohill writes: "VoIP is the killer app for broadband. It's what all those enormous dot-com investments in infrastructure were hoping for back in 1999 and 2000. It is the trifecta--it will lower prices for current voice services, it will introduce valuable new voice

services at little or no additional cost, and the use of VoIP will spur competition and attract new and other kinds of services."

Cities are creating WIFI zones.

A number of cities are creating wireless hotspots or WIFI zones, including Spokane, Washington; South Sioux City, Nebraska; and Carroll, Iowa.   These WIFI zones are popular with business people because they can check their e-mail when they are out of the office.   Many cities are finding that wireless Internet access facilitates efficient city operations.   In South Sioux City, police officers can view real-time video from the South senior/junior high school complex. Sioux City Public Schools or access the Nebraska Criminal Justice Information System from their patrol cars.   The South Sioux City public works department is using the wireless network to access the water department SCADA (Supervisory Control and Data Acquisition) system. In Texas, WIFI access is being installed at rest stops to encourage travelers to stop and rest.

WIFI is not just for laptops or e-mail.   In the future, WIFI zones will be used for making phone calls and playing games.   Some cellular phones are capable of making VOIP calls when in a WIFI zone and Nintendo's new DS handheld will include WiFi. As the number of uses for WIFI increase, the demand for widespread coverage will increase.

Terms to Know

Voice over Internet Protocol (VoIP) is the transmission of voice communications over the Internet.

WIFI is short for wireless fidelity and refers to any type of 802.11 network which can be accessed by a computer with a wireless networking card.

Mesh networks provide redundant connections among access points and eliminates the need to have a connection to the Internet at each access point. The new mesh network equipment is making it more affordable to create WIFI networks.

Sources of Information

Design Nine
www.designnine.com

Pew Internet and American Life
www.pewinternet.org

TANgents
technologiesacrossnebraska.unl.edu

NITC.news
www.nitc.ne.us/news